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REGULAR ARTICLES

Light and electron microscopic studies on human temporal arteries with special reference to alterations related to senescence, atherosclerosis and giant cell arteritis

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Temporal artery biopsy specimens from 26 patients of various ages with and without giant cell arteritis afforded an opportunity to examine several ultrastructural features of these human muscular arteries, including senescent and atherosclerotic alterations and the fine structural pathology of temporal arteritis. The unusual pathologic features of temporal arteritis were found superimposed on the progressive accumulation of smooth muscle cells, collagen and occasional discrete intimal atherosclerotic plaques in the intima of aging arteries. Two features of giant cell arteritis were conspicuous: first, the accumulation of large numbers of histiocytes and epitheloid and giant cells at the intimal-medial junction and second, fragmentation, degeneration and dissolution of the internal elastic lamina. The close proximity of the granulomatous reaction to the degenerating lamina suggests that these two aspects of the pathologic picture are in some way related, and possible immunologic mechanisms of this relationship are discussed on the basis of the ultrastructural findings.

Variation of collagen fiber alignment in a joint surface: A scanning electron microscope study of the tibial plateau in dog, rabbit, and man

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